

THE GENUS *DISSOMPHALUS* IN NORTHWESTERN SOUTH AMERICA
(HYMENOPTERA: BETHYLIDAE)¹

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Abstract.—The genus *Dissomphalus* has not previously been reported from northwestern South America. The following eight species are here described, all from the male sex: *D. megomphalus* (Ecuador), *D. obliquus* (Colombia), *D. bicavatus* (Venezuela), *D. vallensis* (Colombia), *D. hastatus* (Ecuador), *D. napo* (Ecuador), *D. fungosus* (Ecuador), *D. gilvipes* (Colombia).

The genus *Dissomphalus* is unique in having a diversity of paired pits and hair mats or pencils on the second tergite of the male. I presented a generic diagnosis in 1964 and at that time recognized 39 species from the Americas (Evans, 1964). I later added three more species from South America and presented a key to males from that continent (Evans, 1966). In 1969 I described four species from the West Indies (Evans, 1969a, 1969b). In the same year I described eight species from Argentina, and presented a key to species known from that country (Evans, 1969c). However, no species have been reported from Ecuador, Colombia, or Venezuela; and I take this opportunity to describe several striking species that have recently been made available to me from those countries, bringing the total recognized American species to 62.

The function of the tergal pits remains obscure, but considering the distinctive form of these pits in each species, it seems safe to assume that they play a role in mating. I suspect they are glandular and that the female somehow comes in contact with them during phoretic copulation. Females have been associated with only a few species, and the present paper is concerned with males only.

Terminology is the same as that used in my 1964 synopsis. Abbreviations are as follows: HE = height of eye, lateral view; LH = length of head, full frontal view; OOL = ocello-ocular line; WF = width of front, at its mini-

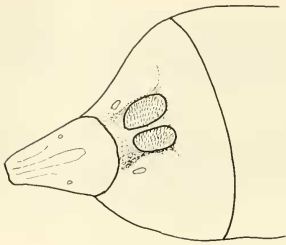
¹ This paper is part of a survey of American Bethylidae, supported by a grant from the National Science Foundation, DEB75-17142.

mum; WH = width of head at its maximum, including eyes; WOT = width of ocellar triangle, including lateral ocelli. The tergal pits, on the second metasomal segment, may be located in concavities which are simply spoken of as depressions.

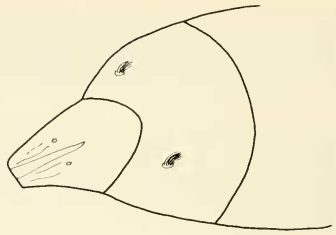
The material on which this paper is based is in large part housed in the Florida State Collection of Arthropods, Gainesville, Florida (abbreviated FSCA in the text). Other material is in the U.S. National Museum (USNM) and some paratypes have been placed in the Museum of Comparative Zoology at Harvard University (MCZ).

KEY TO THE NEW SPECIES OF *DISSOMPHALUS* (MALES)

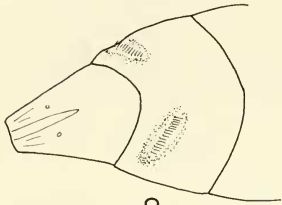
1. Anterior face of 2nd tergum nearly vertical, bearing 2 large, subcontiguous pits, this tergum also with a pair of much smaller depressions laterad of the large pits (Fig. 1) *megomphalus*, new species
 - Anterior face of 2nd tergum more sloping, pits smaller and not subcontiguous (though they may share a common depression), this tergum without additional depressions 2
2. Depressions of 2nd tergum ovoid or linear, much longer than wide (Figs. 2, 3) 3
 - Depressions or pits of 2nd tergum more or less circular (Figs. 4-8) . . 4
3. Tergal depressions linear, oblique, each with a series of close-set, short setae (Fig. 2); 3rd antennal segment about 1.4× as long as wide *obliquus*, new species
 - Tergal depressions ovoid, each with a pit on its mesal margin (Fig. 3); 3rd antennal segment barely longer than wide *bicavatus*, new species
4. Clypeus with an acute median tooth, laterad of which the margin may be somewhat sinuate but without other processes; tergal pits rather close to the midline (Figs. 4, 8) 5
 - Clypeus tridentate; tergal pits more widely spaced (Figs. 5-7) 6
5. Tergal pits located on the sides of a common, bowl-shaped median depression (Fig. 4); head slightly wider than high *vallensis*, new species
 - Tergal pits each located in a separate depression, the depressions separated by less than their own width (Fig. 8); head slightly higher than wide *hastatus*, new species
6. Mandibles bidentate; antennal segment 3 barely longer than wide; coxae and femora dark brown *napo*, new species
 - Mandibles quadridentate; antennal segment three 1.3-1.4× as long as wide; legs largely or wholly testaceous 7
7. Tergal pits fairly large, each giving rise to a group of short, closely matted setae (Fig. 6); clypeal carina straight in profile *fungosus*, new species
 - Tergal pits small, bowl-shaped, each with a small pencil of setae that



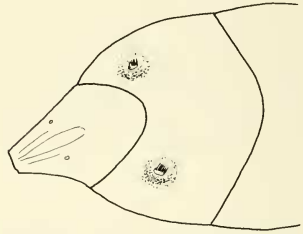
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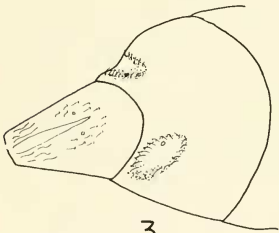
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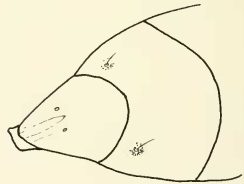
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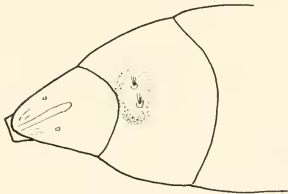
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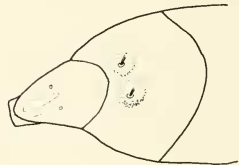
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8

is directed caudad (Fig. 7); clypeal carina, in profile, arched toward the base but somewhat depressed toward the apex

..... *gilvipes*, new species

Dissomphalus megomphalus Evans, NEW SPECIES

Type.—♂, ECUADOR: Limoncocha, on Rio Napo, Napo Prov., 18 March 1974 (Boyce A. Drummond III, Malaise trap) (FSCA).

Description of male type.—Length 3.0 mm; fore wing 2.4 mm. Head and thorax black, abdomen dark brownish fuscous, shining; mandibles rufotestaceous; clypeus dull, dark ferruginous; basal $\frac{1}{4}$ of antenna testaceous, remainder dark brown; legs dark brown except tarsi testaceous and tibiae largely so; wings hyaline. Mandibles tridentate; clypeus trilobed, with a strong median carina which is nearly straight in profile. WH $1.03 \times$ HE; WF $1.15 \times$ HE, eyes diverging above; sides of head rounded behind eyes to a weakly arched vertex; OOL and WOT subequal. Front alutaceous, moderately shining, with an abundance of large but very shallow punctures; eyes strongly hairy. First 4 antennal segments in a ratio of 14:4:4:5, segment three $1.4 \times$ as long as wide. Pronotal disc with a strong anterior, transverse carina; propodeal disc wholly covered with coarse, foveolate sculpturing. Abdomen robust; 2nd tergum rising abruptly above the 1st, its median anterior face nearly vertical, slightly concave, bearing 2 very large, subcontiguous pits which are densely filled with very short setae; tergum 2 also with a pair of much smaller, somewhat pale depressions laterad of these larger pits (Fig. 1).

Paratypes.—ECUADOR: 122 ♂, same data as type except various dates, 28 December 1973–28 September 1974 (FSCA, USNM, MCZ). COLOMBIA: 1 ♂, Mun. Candelaria, Finca San Luis, 1010 m, Dept. Valle, 25–28 July 1975 (R. C. Wilkerson, Malaise trap, tropical dry forest) (FSCA).

Variation.—Length varies from 2.6 to 3.8 mm. In some males the basal antennal segments and outer parts of the legs are more brownish than in the type, but on the whole there is little variation in color or sculpture. The tergal pits of the Colombia specimen are slightly smaller than in any of the Ecuador males, but there is close agreement in all other features.

Dissomphalus obliquus Evans, NEW SPECIES

Type.—♂, COLOMBIA: Dept. Valle, Central de Anchicaya, 30 km E Buenaventura, 560 m, 10 June 1975 (R. Wilkerson, Malaise trap) (FSCA).

Description of male type.—Length 3.7 mm; fore wing 2.6 mm. Piceous:

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Figs. 1–8. Basal two abdominal segments of *Dissomphalus* species, dorsolateral aspect. 1, *megomphalus*. 2, *obliquus*. 3, *bicavatus*. 4, *vullensis*. 5, *napo*. 6, *fungosus*. 7, *gilvipes*. 8, *hustatus*.

mandibles ferruginous on apical $\frac{1}{2}$; antennae rufotestaceous, slightly suffused with brown on apical $\frac{1}{2}$; coxae and femora brown, legs otherwise rufotestaceous; wings subhyaline. Mandibles bidentate; clypeus with a median carina which is straight in profile and at the end of which the clypeal margin is angulate; clypeal margin also with a pair of weak, rounded lobes laterad of the median angulation. WH and LH subequal; WF $1.27 \times$ HE, eyes diverging above; ocelli in a compact triangle, OOL $1.1 \times$ WOT; vertex weakly arched. Front strongly alutaceous, rather weakly shining, punctures numerous but small and inconspicuous. First 4 antennal segments in a ratio of 3:1:1:1, segment three $1.4 \times$ as long as wide. Pronotum short, without a transverse carina; propodeal disc coarsely sculptured except smooth and shining posteriorly, median carina strong, attaining the transverse carina. Second abdominal tergum with a pair of large, oblique depressions dorso-laterally, each depression with a series of close-set, short setae that are directly caudad (Fig. 2).

Paratype.—COLOMBIA: 1 ♂, same data as type except dated 14–16 July 1975 (FSCA).

Variation.—The paratype is slightly larger than the type (fore wing 2.8 mm) but is similar in every other respect.

Dissomphalus bicavatus Evans, NEW SPECIES

Type.—♂, VENEZUELA: Zulia, El Tucuco, 45 km SW Machiques, 5–6 June 1976 (A. Menke and D. Vincent) (USNM).

Description of male type.—Length 3.0 mm; fore wing 2.6 mm. Piceous; mandibles testaceous, tips rufous; antennae testaceous, much darkened on apical $\frac{1}{3}$; legs bright testaceous except front coxae and hind femora suffused with brown; wings hyaline. Mandibles bidentate; median clypeal carina arched in profile, apical margin angulate at end of carina, margin also with 2 rounded projections laterad of the median angulation. Head very slightly wider than high; WF $1.2 \times$ HE; ocelli in a compact triangle, OOL $1.2 \times$ WOT; vertex nearly straight. Front strongly alutaceous, weakly shining, with an abundance of very shallow punctures. First 4 antennal segments in a ratio of 15:5:4:5, segment 3 barely longer than wide. Pronotal disc short, without a transverse carina; propodeal disc coarsely reticulate except merely alutaceous posteriorly, median carina barely reaching transverse carina. Second abdominal tergum with deep, ovoid depressions anterolaterally, each with a circular, setigerous pit on its mesal margin, the depressions fringed with short setae (Fig. 3).

Paratypes.—VENEZUELA: 1 ♂, same data as type; 1 ♂, Aragua, 2 km N Ocumare de la Costa, 21–22 June 1976 (A. Menke and D. Vincent) (USNM).

Variation.—The male from Aragua is small, fore wing 1.9 mm, and is

paler in color than the *Zulia* males, the thorax and abdomen being castaneous, the head fuscous.

Dissomphalus vallensis Evans, NEW SPECIES

Type.—♂, COLOMBIA: Peñas Blancas, 10 km W Cali, Dept. Valle, 26–28 1975 (R. Wilkerson, Malaise trap) (FSCA).

Description of male type.—Length 3.8 mm; fore wing 3.1 mm. Head and thorax black, abdomen deep brown; apical $\frac{1}{2}$ of mandibles ferruginous; scape testaceous, antennae otherwise dark brown; legs medium brown variegated with lighter brown, especially the tarsi; wings subhyaline. Mandibles tapered to an acute apex above which are 2 minute teeth; clypeus sharply angulate medially, at end of median carina, margin otherwise without projections. Head slightly wider than high; WF $1.4 \times$ HE; vertex passing straight across a short distance above eye tops; ocelli in a compact triangle, OOL $1.4 \times$ WOT. Front shining, rather weakly alutaceous, with weak, shallow, inconspicuous punctures. First 4 antennal segments in a ratio of 16:6:6:7, segment three $1.5 \times$ as long as wide. Pronotum of moderate length, without a transverse carina but somewhat coarsely sculptured at crest of anterior slope; median carina of propodeum not reaching transverse carina, posterior part of disc smooth and polished. Abdomen fusiform, slightly depressed, rather slender basally; 2nd tergum with a pair of small, setigerous pits rather close to the mid-dorsal line and located on the sides of a common, shallow, bowl-shaped depression (Fig. 4).

Paratypes.—COLOMBIA: 5 ♂, same data as type except dated 29 October 1974, 31 January 1975, 12–28 February 1975 (FSCA, USNM).

Variation.—The paratypes vary but slightly in size and standard measurements. Three specimens have the mandibles mostly ferruginous and the basal three antennal segments more or less testaceous.

Dissomphalus hastatus Evans, NEW SPECIES

Type.—♂, ECUADOR: Limoncocha, on Rio Napo, Napo Prov., 30 December 1973 (Boyce A. Drummond III, Malaise trap) (FSCA).

Description of male type.—Length 2.4 mm; fore wing 2.3 mm. Deep castaneous, head nearly black; mandibles and basal 2 antennal segments testaceous, remainder of antenna dark brown; femora medium brown, coxae slightly suffused with brown, legs otherwise testaceous; wings hyaline. Mandibles slender, acuminate, with 2 minute teeth on the inner margin a short distance back from the apex; clypeus with an acute median tooth at the apex of the median carina, margin laterad of the tooth somewhat sinuate. WH $0.95 \times$ LH; WF $1.1 \times$ HE, eyes weakly diverging above; head roundly narrowed a short distance behind eyes to a weakly convex vertex; OOL $1.2 \times$ WOT, front angle of ocellar triangle less than a right angle. Front

somewhat alutaceous but moderately shining, punctures shallow and inconspicuous. First 4 antennal segments in a ratio of 11:4:4:4, segment 3 about $1.5\times$ as long as wide. Pronotal disc without a transverse carina; propodeal disc with basal triangle depressed, alutaceous and with a median carina and a pair of additional, short carinae; disc smooth and polished behind, median carina not attaining the transverse carina. Abdomen slender basally, subpetiolate; 2nd tergum with a pair of shallow, bowl-shaped depressions close to the median line, separated by less than their own width; each depression gives rise to a small pencil of setae; there are no other pits or prominent setae on this tergum (Fig. 8).

Paratypes.—ECUADOR: 2 ♂, same data as type except dated 22 January 1974 (FSCA, USNM).

Variation.—The paratypes resemble the type closely in all respects. Leg color varies somewhat, one specimen having the legs almost entirely testaceous to straw colored.

Dissomphalus napo Evans, NEW SPECIES

Type.—♂, ECUADOR: Limoncocha, on Rio Napo, Napo Prov., 19 March 1974 (Boyce A. Drummond III, Malaise trap) (FSCA).

Description of male type.—Length 3.9 mm; fore wing 2.8 mm. Head and thorax black, abdomen deep castaneous; mandibles and clypeus dusky ferruginous; antennae light brown except much darkened on apical $\frac{1}{2}$; coxae and femora dark brown, legs otherwise testaceous; wings hyaline. Mandibles bidentate; clypeus trilobed, with a median carina which is nearly straight in profile. WH and LH subequal; WF $1.2\times$ HE, eyes weakly diverging above; sides of head rounded behind eyes to a nearly straight vertex; OOL $1.25\times$ WOT, ocelli in a compact triangle well below top of vertex. Front alutaceous, covered with large but shallow punctures which are separated for the most part by less than their own diameters; eyes with scattered, very short hairs only. First 4 antennal segments in a ratio of 14:5:4:5, segment 3 barely longer than wide. Pronotal disc without a transverse carina; propodeal disc wholly covered with coarse reticulations, slightly depressed in the basal triangle. Abdomen fusiform; 2nd tergum with a pair of widely spaced, circular depressions, rather small in size, each giving rise to a small cluster of setulae which are directed strongly caudad, this tergum also with a few very short lateral setae (Fig. 5).

Paratypes.—ECUADOR: 55 ♂, same data as type except dates 28 December 1973–1 May 1974 (FSCA, USNM, MCZ).

Variation.—The paratypes vary in length from 3.4 to 4.0 mm, but there is otherwise no variation worthy of note in this series.

Dissomphalus fungosus Evans, NEW SPECIES

Type.—♂, ECUADOR: Limoncocha, on Rio Napo, Napo Prov., 1 April 1974 (Boyce A. Drummond, Jr., Malaise trap) (FSCA).

Description of male type.—Length 3.0 mm; fore wing 2.8 mm. Head and thorax black, abdomen dark brown, shining; mandibles dull ferruginous; antennae testaceous basally, gradually infuscated over apical $\frac{2}{3}$; legs rufo-testaceous except coxae and femora weakly suffused with brown; wings subhyaline. Mandibles quadridentate, with 3 minute teeth in a series above the large apical tooth; clypeus trilobed, median tooth acute and located at the end of a carina which is straight in profile. Head barely wider than high, with a broad, weakly arched vertex; WF $1.2 \times$ HE; OOL $1.35 \times$ WOT. Front strongly alutaceous, weakly shining, covered with strong punctures which are separated by about or somewhat less than their own diameters. First 4 antennal segments in a ratio of 15:5:4:5, segment 3 about $1.4 \times$ as long as wide. Pronotal disc short, with rather rough surface sculpturing but without a transverse carina; propodeal disc and posterior slope wholly covered with coarse reticulations. Second tergum with a pair of large, circular depressions dorsolaterally, each giving rise to a large group of closely matted setae (Fig. 6).

Paratypes.—ECUADOR: 3 δ , same data as type except two collected 27 January and 13 February 1974 (FSCA, USNM).

Variation.—None worthy of note.

Dissomphalus gilvipes Evans, NEW SPECIES

Type.— δ , COLOMBIA: Dept. Valle, Central de Anchicaya, 30 km E Buenaventura, 560 m, 14–16 July 1975 (R. Wilkerson, Malaise trap) (FSCA).

Description of male type.—Length 2.6 mm; fore wing 2.0 mm. Head and thorax black, abdomen deep brown, shining; mandibles testaceous and scape largely of this color, but flagellum dark brown; legs entirely bright testaceous; wings subhyaline. Mandibles with an apical tooth above which are 3 small teeth; clypeus with a median apical angulation laterad of which are 2 small, rounded and slightly elevated processes; median clypeal carina weakly arched in profile basally, but somewhat depressed just before the apex. Head barely wider than high; WF $1.25 \times$ HE; vertex nearly straight; OOL $1.2 \times$ WOT. Front moderately shining, somewhat alutaceous, punctures minute and inconspicuous. First 4 antennal segments in a ratio of about 13:5:4:4, segment three $1.3 \times$ as long as wide. Pronotum without a transverse carina; propodeum with strong reticulations, median carina only faintly reaching transverse carina. Second tergum with a pair of widely spaced, small, bowl-shaped depressions, each giving rise to a pencil of setae that is directed caudad (Fig. 7).

Paratypes.—COLOMBIA: 2 δ , same data as type (USNM, FSCA).

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